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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/293,198	04/16/1999	RAUL RAUDALES	09879/03001	4556

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225 FRANKLIN ST  
BOSTON, MA 02110

EXAMINER
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RAGONESE, ANDREA M

ART UNIT	PAPER NUMBER
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3749

18

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/293,198

Applicant(s)

RAUDALES, RAUL

Examiner

Andrea M. Ragonese

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-15, 17-27, 29-34 and 36-42 is/are pending in the application.
- 4a) Of the above claim(s) 22-27 and 29-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-15, 17-21, 32-34 and 36-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 17 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on July 17, 2003 has been entered. Examiner acknowledges that **claims 2, 5 and 17** have been amended; **claims 1, 14-16, 28 and 35** have been canceled; and **claims 22-27 and 29-31** have been withdrawn from consideration.

### *Drawings*

2. The proposed drawing corrections were received on July 17, 2003. These drawing corrections are approved by the Examiner.

### *Response to Arguments*

3. Applicant's arguments, see pages 12-13, and information provided in response to requirement under 37 CFR § 1.105, see pages 10-11, filed July 17, 2003, with respect to **claims 2-13 and 17-21** have been fully considered and are persuasive. The 102(b) rejection of **claims 2-13 and 17-21** has been withdrawn.

4. Applicant's arguments with respect to **claims 2-13 and 17-21** have been considered but are moot in view of Applicant's amendment filed on July 17, 2003 and the new ground(s) of rejection necessitated thereby.

5. Applicant's arguments, filed July 17, 2003, with respect to **claims 32-34 and 36-42**, have been fully considered but they are not persuasive. In response to applicant's arguments, the recitation "a dryer for drying vegetable product" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a

process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Therefore, the 102(b) rejection of **claims 32-34** and **36-42** of the previous Office action still stands and has been made **FINAL**.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. **Claims 2-4** are rejected under 35 U.S.C. 102(e) as being anticipated by Stoll (US 5,960,560). Stoll discloses a dryer **16a** for drying vegetable product, as shown in Figure 10, comprising:

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- a thermal collector **28** constructed and arranged to convert solar energy **30** to heat energy (column 4, lines 50-53);
- a heat transfer system **26** (column 4, lines 48-49);
- a housing **18** having a drying chamber **20** (column 4, lines 42-44);
- wherein said heat transfer system **26** is in thermal communication with both said thermal collector **28** and said drying chamber **20** such that heat is able to move from said thermal collector **28** to said drying chamber **20** (column 4, line 66-column 5, line 3);
- a photovoltaic module **76** constructed and arranged to provide electrical power to said heat transfer system **26**, said photovoltaic module **76** being electrically connected to said heat transfer system **26** (column 5, lines 35-41);
- wherein said photovoltaic module **76** further comprises a battery **78** constructed and arranged to store electrical energy (column 5, lines 41-43);
- and
- wherein said photovoltaic module **76** provides all of the electrical energy consumed by dryer **16a**.

9. **Claims 5, 6, 11 and 12** are rejected under 35 U.S.C. 102(e) as being anticipated by Soucy (US 6,202,321 B1). Soucy discloses a dryer **50** for drying vegetable product (column 5, lines 47-62), shown in Figures 5 and 6, comprising:

- a thermal collector **510** constructed and arranged to convert solar energy to heat energy;
- a heat transfer system **504**;

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- a housing **500** having a drying chamber;
- wherein said heat transfer system **504** is in thermal communication with both said thermal collector **509** and said drying chamber **500** such that heat is able to move from said thermal collector **509** to said drying chamber; and
- wherein heat transfer system **504** further comprises:
  - a first heat transfer circuit **112, 113** (or **122, 123**) including a first pump and first heat transfer medium (column 3, lines 45-50 and column 7, lines 25-37), as shown in Figure 11A (or Figures 11B and 11C);
  - a second heat transfer circuit including a second pump **508** and a second heat transfer medium;
  - a first heat exchanger **111** (or **121**) (column 3, lines 45-50 and column 7, lines 25-37), as shown in Figure 11A (or Figures 11B and 11C);
  - wherein said first heat exchanger **111** (or **121**) is in thermal communication with said thermal collector **510** via said first heat transfer circuit **112, 113** (or **122, 123**) and said first heat exchanger **111** (or **121**) in thermal communication with said drying chamber **500** via said second heat transfer circuit such that heat is able to move from said first heat transfer circuit **112, 113** (or **122, 123**) to said second heat transfer circuit;
  - wherein first heat transfer medium is water (column 3, lines 45-47); and
  - wherein said second heat transfer medium is air (column 5, lines 57-62).

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10. **Claims 32-34 and 36-42** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Crossley (US 3,566,770). Crossley discloses a dryer for drying vegetable product comprising:

- a housing **26** defining a cylindrical drying chamber **22**, the housing **26** having an outer wall extending around the drying chamber **22**, the outer wall defining a plurality of perforations for intaking and exhausting fluid (column 2, lines 13-19);
- an infuser **62** adjacent to the perforations for infusing fluid through the perforations (column 2, lines 58-79); and
- wherein the housing **26** is constructed and arranged to rotate relative to the infuser **62** (column 2, lines 27-37).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 7, 8 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Soucy (US 6,202,321 B1) in view of Koizumi et al. (US 4,137,898). Soucy teaches an drying apparatus comprising all limitations recited in **claims 7, 8 and 13**, with the exception of a specific heat storage medium and a specific auxiliary heat source, although Soucy does teach that auxiliary heat can also be added anywhere to the airflow (column 8, lines 40-49). Koizumi et al. teaches the use of a heat storage

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medium **11** for preserving the heat of hot air in thermal communication with an auxiliary heat source **12** for heating air by other means than solar energy (column 2, lines 11-33). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the drying apparatus of Soucy to have a heat storage medium in thermal communication with an auxiliary heat source to provide heat to the drying chamber of Soucy because, as taught by Koizumi et al., it is well-known in the art to utilize a heat storage medium in conjunction with an auxiliary heat source in order to operate the system at night time or during the time in which sunshine is not obtained for drying (column 1, lines 6-13).

13. **Claims 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Soucy (US 6,202,321 B1) in view of Qader (US 4,290,779). Soucy teaches an drying apparatus comprising all limitations recited in **claims 8-10**, with the exception of a specific auxiliary heat source, such as a furnace that burns biomass, although Soucy does teach that auxiliary heat can also be added anywhere to the airflow (column 8, lines 40-49). Qader teaches the use of a furnace **50** that burns biomass for providing heating when solar radiation is unavailable (column 5, lines 6-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the drying apparatus of Soucy to have a an auxiliary heat source to provide heat to the drying chamber of Soucy because, as taught by Qader, it is well-known in the art to utilize a furnace that burns biomass in order to operate the system when solar radiation is unavailable, such as at night or during periods when the sky is overcast.



14. **Claims 17-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullin et al. (US 4,099,338) in view of Drake (US 5,035,117). Mullin et al. teaches an drying apparatus comprising all limitations recited in **claims 17-21**, with the exception of an auxiliary generator, such as an external combustion engine operating according to the Stirling thermal cycle, for providing all electrical energy required to operate the drying apparatus and for providing heat to a heat exchange in fluid communication with the heat transfer system. Drake teaches the use of an engine/generator module **12** which includes a thermal engine **14** (such as a Stirling engine, which is an external combustion engine) with a shaft **16** driving electrical generator **18** for converting the work of the engine **14** in electrical power for electrical systems **22** for instrumentation, control and powering of the various components of invention **10** (column 2, lines 56-66). In addition, the exhaust of engine **14** is directed via pipes **44, 46** to heat exchanger **50** (column 3, lines 20-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the drying apparatus of Mullin et al. to have an auxiliary generator to provide all the electrical energy required to operate the drying apparatus of Mullin et al. and supply heat exhausted from the generator to a heat exchanger that is connected in fluid communication to the heat transfer system of Mullin et al. because, as taught by Drake, it is well-known in the art to utilize an engine/generator module in order to provide all the electrical power for electrical systems of an invention, such as a drying apparatus, and provide heat from the exhaust of the engine/generator module to a heat exchanger in thermal communication with the heat transfer system.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Huang (US 4,240,210) and Stokes (US 4,490,926) both disclose methods and apparatuses for utilizing solar energy in order to dry wet material. The article "How Stirling Engines Work" discloses information regarding external combustion engines and how they operate according to the Stirling thermal cycle.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

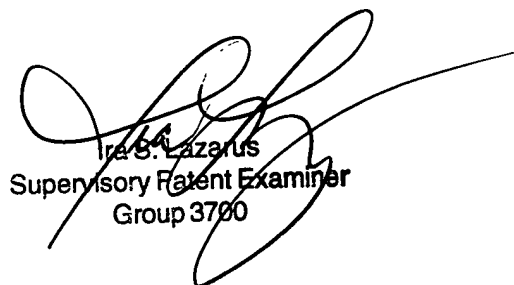
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Andrea M. Ragonese** whose telephone number is **(703) 306-4055**. The examiner can normally be reached on Monday through Thursday from 8 am until 4 pm ET.

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19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira S. Lazarus can be reached on (703) 308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

20. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

amr  
August 28, 2003

  
Ira S. Lazarus  
Supervisory Patent Examiner  
Group 3700